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ABSTRACT

As the field of science and technology expand, so do the career opportunities. The physical and life sciences, the applied sciences, and the high technology industries can provide opportunities for those who receive appropriate training and degrees. This guide is intended to provide those with an interest in pursuing careers in science and technology with a listing of some of the materials included in the Library of Congress that deal with such careers. It includes descriptions of jobs and careers, the training and courses required for them, the potential job markets, and rewards that are possible in choosing such a career. The document lists the subject headings used by the Library of Congress in cataloging information on career opportunities in science and technology. It also contains citations of materials categorized as: (1) brief introductions; (2) basic texts; (3) additional titles; (4) handbooks and encyclopedias; (5) other bibliographies; (6) Washington/Baltimore area job opportunities; (7) government publications; (8) abstracting and indexing services; (9) journal articles; (10) technical reports; and (11) additional sources of information. (TW)

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CAREER OPPORTUNITIES IN SCIENCE AND TECHNOLOGY

Compiled by Joanna W. Evans

TB 86-10 December 1986

SCOPE: As the fields of science and technology expand, so do the career opportunities. The physical and life sciences, the applied sciences, and the high technology industries provide stimulating and enriching opportunities for those with vocational training, college, and advanced degrees.

This guide is intended for those who wish to investigate career possibilities and opportunities in science and technology. Sources providing descriptions of jobs and careers in these areas, the training and courses of study required, the potential job markets, and the rewards that are possible in choosing such a career are given. Not meant to be a comprehensive bibliography, this compilation is designed--as the name of the series implies--to put the reader "on target."

SUBJECT HEADINGS used by the Library of Congress, under which books on career opportunities in science and technology can be located in most card, book, and online catalogs, include the following:

SCIENCE--VOCATIONAL GUIDANCE (Highly relevant)
See also specific disciplines, e.g., BIOLOGY--VOCATIONAL GUIDANCE, ENGINEERING--VOCATIONAL GUIDANCE
TECHNOLOGY--VOCATIONAL GUIDANCE (Highly relevant)
HIGH TECHNOLOGY INDUSTRIES--VOCATIONAL GUIDANCE (Relevant)
See also specific industries, e.g., AEROSPACE INDUSTRIES--VOCATIONAL GUIDANCE, ENERGY INDUSTRIES--VOCATIONAL GUIDANCE, ELECTRONIC INDUSTRIES--VOCATIONAL GUIDANCE
WOMEN IN SCIENCE (Relevant)
See also specific disciplines, e.g., WOMEN IN AERONAUTICS, WOMEN IN MEDICINE
SCIENTISTS--EMPLOYMENT (Related)
See also specific disciplines, e.g., PHYSICIANS--EMPLOYMENT
WOMEN SCIENTISTS (Related)
See also specific disciplines, e.g., WOMEN ENGINEERS, WOMEN GEOLOGISTS
CAREER EDUCATION--UNITED STATES (More general)
JOB VACANCIES--(Name of city or state) (More general)
SCIENTISTS--UNITED STATES (More general)
VOCATIONAL GUIDANCE--UNITED STATES (More general)
See also specific cities or states, e.g., VOCATIONAL GUIDANCE--MARYLAND, VOCATIONAL GUIDANCE--WASHINGTON METROPOLITAN AREA
VOCATIONAL GUIDANCE FOR WOMEN (More general)

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BASIC TEXTS

Career employment opportunities directory: a guide to career employment opportunities for graduates in the liberal arts and social sciences. Editor, Alvin Renetzky; associate editor, Cindy Turnage. 2nd ed. Santa Monica, Calif., Ready Reference Press, c1985. 4 v.
HF5382.5.U5C265 1985

Contents: v. 1. Liberal arts and social sciences.--v. 2. Business administration.--v. 3. Engineering and computer sciences.--v. 4. Sciences.

Career information center. Editor, Kathleen A. Peterson. 2nd ed. Encino, Calif., Glencoe; New York, Macmillan, c1984. 13 v.
Includes bibliographies. HF5382.5.U5C32 1984

Contents: 1. Administration, business, and office.--2. Agribusiness, environment, and natural resources.--3. Communications and the arts.--4. Construction.--5. Consumer, homemaking, and personal services.--6. Engineering, science, and technology.--7. Health.--8. Hospitality and recreation.--9. Manufacturing.--10. Marketing and distribution.--11. Public and community services.--12. Transportation.--13. Master index.

The Encyclopedia of careers and vocational guidance. William E. Hopke, editor-in-chief. 6th ed. Chicago, J.G. Ferguson Pub. Co., 1984. 3 v.
HF5381.E52 1984 SSRR

Contents: v. 1. Reviewing career fields.--v. 2. Selecting a career.--v. 3. Selecting a technician's career.

Feingold, S. Norman, and Norma Reno Miller. Emerging careers: new occupations for the year 2000 and beyond. v. 1. The newest of the new. Garret Park, Md., Garret Park Press, c1983. 172 p.
No more published? HF5382.F44 SSRR

Handbook and guide for selecting a career and preparing for the future. New York, Research and Education Association, c1984. 481 p.
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"Dictionary of occupational titles (D.O.T.) index": p. 461-470.

Malnig, Lawrence R., and Anita Malnig. What can I do with a major in--? How to choose and use your college major. Ridgefield, N.J., Abbott Press, c1984. 240 p. HF5382.5.U5M34 1984 SSRR

Shertzer, Bruce. Career planning: freedom to choose. 3rd ed. Boston, Houghton Mifflin, c1985. 382 p. HF5382.U5S475 1985

Splaver, Sarah. Careers new and unique. New York, J. Messner, c1979. 160 p. HF5381.2.S58

Bibliography: p. 153-154.

Provides information needed to make a career decision and plan an appropriate education that will lead to an unusual occupation. Among the careers discussed are those of radiographer, aerospace scientist, tape librarian, and inhalation therapist.

Worthington, Robert M. Careers: an overview. Englewood Cliffs, N.J., Prentice-Hall, c1977. 120 p. HF5381.2.W67

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Badasch, Shirley A., and Doreen S. Chesebro. The health care worker: an introduction to health occupations. Bowie, Md., Brady Communications Co.; Chicago, Ill., Hospital Research and Educational Trust, c1985. 267 p. R697.A4B33 1985
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Easton, Thomas A. Careers in science. Homewood, Ill., Dow Jones-Irwin, c1984. 127 p. Q147.E27 1984
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Fanning, Odom. Opportunities in environmental careers. Lincolnwood, Ill., VGM Career Horizons, c1986. 144 p. TD156.F35 1986
Discusses training for and opportunities in a wide variety of environmentally focused career fields, from biology and industrial hygiene to wildlife conservation and landscape architecture.

Gale, Barry, and Linda Gale. Discover your high tech talents. New York, Simon and Schuster, c1984. 137 p. T21.G35 1984

Giammattei, Victor Michael, and Jamie Gail Anderson. Training programs & careers in animal health technology & veterinary nursing in North America. Napa, Calif., Dillon-Tyler, 1985. 164 p. SF774.4.G53 1985

Lobb, Charlotte. Exploring animal care careers. New York, Richards Rosen Press, 1981. 112 p. SF80.L62
Examines 20 careers related to animal care, many of which require little or no post-high school training.

Marrs, Texe W. High technology careers. Homewood, Ill., Dow Jones-Irwin, c1986. 177 p. T21.M374 1986*
Includes bibliographies.

Millard, Reed. Energy: new shapes/new careers. Reed Millard and the editors of Science Book Associates. New York, J. Messner, c1982. 192 p. TJ163.23.M54 1982*
Bibliography: p. 179-180.
Describes new developments in the field of energy and the challenges of reconciling limited resources with increasing needs. Also discusses various career opportunities in this field, the necessary preparation, and future potential.

*Available in the reference collection, Science Reading Room

Miller-Allan, Paula A. Introduction to the health professions. Monterey, Calif., Wadsworth Health Sciences Division, c1984. 216 p. R690.M55 1984

Mitchell, Joyce Slayton. Your job in the computer age: the complete guide to the computer skills you need to get the job you want. New York, Scribner, c1984. 180 p. HF5382.5.U5M59 1984

Peterson's engineering, science & computer jobs. 1985- Princeton, N.J., Peterson's Guides. TA157.P44*
Annual.

Reyes-Guerra, David R., and Alan M. Fischer. The engineering/high-tech student's handbook: preparing for careers of the future. Princeton, N.J., Peterson's Guides, c1985. 120 p. TA157.R48 1985*
Rev. ed. of Peterson's guide to undergraduate engineering study, c1981.

Shapiro, Stanley Jay. Exploring careers in science. New York, Richards Rosen Press, 1981. 144 p. Q147.S48
Discusses careers in the physical, life, environmental, conservation, and mathematical sciences and how to prepare for them.

Sheffield, Charles, and Carol Rosin. Space careers. New York, Morrow, 1984. 240 p. TL850.S54 1984
Includes bibliographies.

Simmons, M. L. Career guide to the animal health field. 2nd ed. Media, Pa., Harwal Pub. Co., c1984. 84 p. SF756.28.S55 1984
An introduction to careers, requirements, and educational programs in veterinary medicine, veterinary science, and animal health technology.

Sindermann, Carl J. The joy of science: excellence and its rewards. New York, Plenum Press, c1985. 259 p. Q147.S56 1985*
Includes bibliographical references.

Stearner, S. Phyllis. Able scientists--disabled persons: biographical sketches illustrating careers in the sciences for able disabled students. Oakbrook, Ill., J. Racila Associates, 1984. 65 p. Q141.S76 1984
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Winter, Charles A. Opportunities in biological sciences. Lincolnwood, Ill., VGM Career Horizons, c1984. 150 p. QH314.W55 1984
Updated ed. of Opportunities in biological sciences careers, 1976.
Bibliography: p. 147-150.
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Woodburn, John H. Opportunities in chemistry. Skokie, Ill., VGM Career Horizons, c1979. 130 p. QD39.5.W64
Bibliography: p. 129-130.
Examines the education requirements, necessary personal qualities, and employment opportunities for many jobs related to chemistry.

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Career choices encyclopedia: guide to entry-level jobs. Career Associates. New York, Walker and Co., 1986. 880 p. HF5382.5.U5C253 1986

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Directory of internships, work experience programs, and on-the-job training opportunities. Editor, Alvin Renetzky; assistant editor, Rebekah Berger. 2nd ed. Santa Monica, Calif., Ready Reference Press, c1986. 2 v. HF5549.5.T7D55 1986

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Contains annotated bibliographies.

Projected response of the science, engineering, and technical labor market to defense and nondefense needs: 1982-1987. Washington, National Science Foundation, 1984. 54 p. (NSF 84-304)
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Vocational tests and reviews: a monograph consisting of the vocational sections of the seven Mental measurements yearbooks (1938-1972) and Tests in print II (1974). Edited by Oscar Krisen Buros. Highland Park, N.J., Gryphon Press, 1975. 1087 p. HF5381.7.V58

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Annual. HD5718.E472U63

Occupational outlook quarterly. 1957- United States Department of Labor, Bureau of Labor Statistics in cooperation with Veterans Administration. Washington, The Bureau; for sale by the Supt. of Docs., U.S. Govt. Print. Off. HF5382.5.U503

Science and engineering personnel. 1980- Washington, National Science Foundation; for sale by the Supt. of Docs., U.S. Govt. Print. Off. Q149.U5S3115
Biennial.

Verheyden-Hilliard, Mary Ellen. Women in nontraditional careers (WINC): curriculum guide. 1984 ed. Washington, U.S. Dept. of Labor, Office of the Secretary, Women's Bureau; for sale by the Supt. of Docs., U.S. Govt. Print. Off., 1984. 652 p. NOT IN LC COLLECTION
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Employment guide for engineers and scientists: a practical job hunter's manual. Student ed. Richard James Backe, editor-in-chief. New York, Institute of Electrical and Electronics Engineers; Piscataway, N.J., additional copies available from IEEE Service Center, c1984. 290 p. TA157.E47 1984*
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Biweekly.

The Metropolitan Washington job bank, including Baltimore & Northern Virginia. Senior editor, Robert Land Adams; managing editor, J. Michael Fiedler. Brighton, Mass., B. Adams, c1983. 272 p. HF5382.5.U6W355 1983

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ABSTRACTING AND INDEXING SERVICES that index relevant journal articles and other literature are listed below. Some suggested terms are given as aids in searching.
The following indexes are available in most public and college libraries.

Applied Science & Technology Index (1913-) Z7913.I7*
See: Job Selection
Professions
Vocational Guidance

General Science Index (1978-) Z7401.G46*
See: Job Selection
Scientists
Vocational Guidance

Government Reports Announcements & Index (1946-) Z7405.R4G64*
See: Careers
Job Analysis
Jobs

Magazine Index (1982-) uncataloged
See: Science--Vocational Guidance
See also Computers, Veterinarians, etc.--Vocational Guidance, Engineers, etc.--Employment

Monthly Catalog of United States Government Publications (1895-) Z1223.A18*
See: Vocational Guidance
See also Aeronautics--United States--Vocational Guidance, Meteorology--United States--Vocational Guidance, etc.

Readers' Guide to Periodical Literature (1900-) AI3.R45
See: Scientists--Supply and Demand
See also Geology, etc.--Supply and Demand, Occupations

Resources in Education (1966-) L11.R28
See: Science Careers
See also Health Occupations, Farm Occupations, etc.

A JOURNAL that regularly lists employment opportunities in the fields of science and technology is

Career opportunity update (uncataloged) SSRR

REPRESENTATIVE JOURNAL ARTICLES

1987 employment outlook: career opportunities for chemical professionals. Chemical & engineering news, v. 64, Oct. 27, 1986: 29-59. TP1.C35
Includes sections on continuing education, employment market, salaries, and career planning.

Note: Consult reference librarian for location of abstracting and indexing services in the Science Reading Room.

Crowley, Anne E., Sylvia I. Etzel, and Edward S. Petersen. Undergraduate medical education. JAMA: the journal of the American Medical Association, v. 252, Sept. 28, 1984: 1525-1532. R15.A48

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Hooper, Judith. Hard science. Omni, v. 8, Oct. 1985: 114-116, 118, 120, 121. AP2.O452

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Rochow, Eugene G. Choices. Journal of chemical education, v. 63, May 1986: 400-405. QD1.J93

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Presents a short history of American women in astronomy.

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"Prepared in cooperation with National Council for International Health, Washington, D.C."

Gottfredson, Linda S. A skills map: the general and specific competencies required by different occupations: progress report. Baltimore, Md., Center for Social Organization of Schools, Johns Hopkins University, 1981. 1 v. (various pagings) ED246 238**
Bibliography: p. 114-116.

Hesla, J. R., and V. Kaminski-da Roza. Lifelong engineering is the goal. Livermore, Calif., University of California, Lawrence Livermore National Lab., Oct. 1985. 8 p. UCRL-93393**
"IEEE Careers Conference, Boston, Mass., Oct. 3, 1985."

Minority women in math and science. St. Paul, Minn., Urban Affairs Dept., St. Paul Public Schools, Sept. 1982. 44 p. ED261 115**

Women and minorities in science and engineering, 1976-1984. Washington, Division of Science Resource Studies, National Science Foundation, January 1986. 191 p. (NSF-86-301) PB86-166 360**

**Available in microform collection, Science Reading Room.

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Gentry, D. W. Future career considerations in the minerals industry. Mining engineering, v. 37, Feb. 1985: 121-125.

Hemenway, Don. How to be a geologist. Earth science, v. 38, spring 1985: 23-24.

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Rossbacher, Lisa A. The stuff of dreams. Earth science, v. 38: summer 1985: 14-17.
Describes astronaut candidate program.

Worthington, Jill. Become a veterinary technician. The Mother earth news, no. 89, Sept./Oct. 1984: 84-85.

ADDITIONAL SOURCES OF INFORMATION

American Association for the Advancement of Science (AAAS)
Office of Opportunities in Science
1333 H Street, N.W.
Washington, D.C. 20005
Telephone: (202) 326-6610

National Science Foundation
Public Information Branch
1800 G Street, N.W.
Washington, D.C. 20550
Telephone: (202) 357-9498

Scientific Manpower Commission
1776 Massachusetts Avenue, N.W.
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Telephone: (202) 223-6995